

Application/ Control Number: 10/776,741

Art Unit: 3733

Examiner: Philogene pedro

Claim 4

A hand drill for piercing a hole for passing a sternum suture wire through the sternum during cardiovascular surgery and comprising a tip blade and a T-shaped plate form grip that grips and is connected to a tip blade wherein a hook ditch is formed on the side of the tip blade for pulling up the suture wire, the form of the tip blade is a two-blade form in a fork shape with the feature of the two-blades being arranged so that the tip of the two-blades slant from the outside inwards and the base part of the fork shape of the two-blades has one side made in a slope from the foreside to the tip, and the surface of the grip has dimples and hollows applied for slip-proof purposes.

CLAIMS.

1. (Canceled)

~~A hand drill for manual usage to pierce holes, wherein the shape of the tip blade is sharpened in a tapered form, a shaved powder ditch is applied in a slanted way from the tip end towards the foreside with the width of the center of the tip to one edge, with the structure of both edges of the shaved powder ditch are blades, and the two edges of the shaved powder ditch in the tapered form becomes gradually into acute angle in the rotating direction, so that the hand drill will move away from the surface of the bone avoiding contact with the bone surface.~~

2. (Canceled)

~~A manual hole piercing hand drill, wherein the tip end of the round pillar form drill is made in a bi-plane taper form from the tip to the foreside, blades are attached on the peripheral of the drill, the peak line of the tip is slanted from the two edges towards the center onto which a blade is attached, the center part of the peak line has a ditch in the vertical direction forming two blades, and a straight linear slit is applied in the longitudinal direction from bottom part of the bi-plane taper form.~~

3. (Canceled)

~~A manual hole piercing hand drill, wherein the form of the tip blade is a two-blade form in a fork shape, with the feature of the two blades being arranged so that the tip of the two blades slant from the outside inwards, and the base part of the fork shape of the two blades has one side made in a slope from the foreside to the tip.~~

4. (Currently amended)

~~A hand drill for sternum suture surgery of the hand drill according to Claims 1, 2 and 3, to pass sternum suture wire through the sternum, wherein a hook ditch is formed at the side of the tip for pulling up the suture wire.~~

A hand drill for piercing a hole for passing a sternum suture wire through the sternum during cardiovascular surgery and comprising a tip blade and a T-shaped plate form grip that grips and is connected to a tip blade wherein a hook ditch is formed on the side of the tip blade for pulling up the suture wire, the form of the tip blade is a two-blade form in a fork shape with the feature of the two-blades being arranged so that the tip of the two-blades slant from the outside inwards and the base part of the fork shape of the two-blades has one side made in a slope from the foreside to the tip, and the surface of the grip has dimples and hollows applied for slip-proof purposes.

5. (Canceled)

~~A hand drill for sternum suture surgery of the hand drill according to Claims 1, 2 and 3, wherein the pole shape grip part is connected to the drill axis part perpendicularly, with the feature of the grip part in a smooth fitting form for the palm without any gap when held inside a fist with the drill axis part being gripped between the forefinger and a middle finger, enabling more strength to be transmitted when a hole is pierced with this drill manually.~~

6. (Canceled)

~~A hand drill for sternum suture according to Claim 4, wherein the pole shape grip part is connected to the drill axis part perpendicularly, with the feature of the grip part in a smooth fitting form for the palm without any gap when held inside a fist with the drill axis part being gripped between the forefinger and a middle finger, enabling more strength to be transmitted when a hole is pierced into a sternum with this drill manually.~~

7. (Canceled)

~~A hand drill according to Claims 1, 2 and 3, wherein the T-shape plate form grip is connected to the drill axis part, and the surface of the T-shape plate having dimples and hollows applied for slip proof features.~~

8. (Canceled)

~~A hand drill for sternum suture according to Claim 4, wherein the T-shape plate grip is connected to the drill axis part, and the surface of the T-shape plate having dimples and hollows applied for slip proof features.~~

9. (Canceled)

~~A manufacturing method for a hand drill according to Claim 5, when manufacturing a hand drill depicted above, wherein a metal pole material is utilized to form the tip with press processing method, blades are attached with a grinder, then the tip is inserted with pressure into a core metal for prevention of rotation and for reinforcement, and then the grip part and the core metal part are connected and formed with resin insert mould processing method.~~

10. (Canceled)

~~A manufacturing method for a hand drill according to Claim 7, for manufacturing a hand drill depicted above, wherein a metal pole material is utilized to form the tip with press processing method, blades are attached with a grinder, then the tip is~~

~~inserted with pressure into the core metal for prevention of rotation and for reinforcement, and then the grip part and the core metal part are connected and formed with resin insert mould processing method.~~

11. (Canceled)

~~A manufacturing method for a hand drill according to Claims 6 and 8, when manufacturing a hand drill depicted above, wherein a metal pole material is utilized to form the tip with press processing method, blades are attached with a grinder, then the tip is inserted with pressure into the core metal for prevention of rotation and for reinforcement, and then the grip part and the core metal part are connected and formed with resin insert mould processing method.~~